



BUREAU OF TRANSPORTATION STATISTICS

U.S. Department of Transportation

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1993 COMMODITY FLOW SURVEY: Preliminary Observations

June 22, 1995 (revised August 7, 1995)

About the Commodity Flow Survey (CFS):

- The CFS is the first comprehensive effort to learn where and how goods are shipped in the U.S. since 1977. Much has happened since then: deregulation, the North American Free Trade Agreement, the growth of intercontinental trade, restructuring of the economy, and the emergence of new transportation technology and services such as just-in-time delivery systems.
- The CFS represents major partnership between the U.S. Department of Transportation and the Bureau of the Census. Census conducted the CFS as a regular part of its Economic Census, providing core funding and substantial in-kind services. The Department of Transportation provided technical guidance and financial support through its Bureau of Transportation Statistics (BTS), and sponsored the development of distance calculations and related activities at Oak Ridge National Laboratory.

CFS coverage and products:

- The 1993 CFS is substantially larger in coverage and depth than its predecessor surveys. The 1993 CFS measured \$6 trillion of goods weighing 9.9 billion tons shipped throughout CY 1993 by 800,000 business establishments, consuming 2.5 trillion ton miles of movement. These totals are based on a sample of 12 million shipments from 200,000 individual establishments in manufacturing, wholesaling, and selected other industries. The 1977 sample was limited to manufacturing establishments, and covered only 1 million shipments from 20,000 establishments.
- The two biggest areas not covered by the CFS include shipments of crude petroleum and imports, primarily affecting statistics for water transportation and pipelines. The attachments contain estimates of the missing value, tons, and ton miles calculated by Oak Ridge National Laboratory.
- The tables released to date by Census include preliminary tabulations of value, tons, and ton miles of shipments by mode of transportation summarized for the Nation. The tables also break the total down by distance shipped and size of shipment.
- Data on the flows of individual commodity groups by mode of transportation between and within States, as well as flows among 89 National Transportation Analysis Regions, will be released later this year, followed by detailed national summaries.

Comparisons with other sources:

- Estimates by Oak Ridge National Laboratory of domestic value, tons, and ton miles not covered by the CFS in the attached table are based on waterborne tons and ton miles measured by the U.S. Army Corps of Engineers, and on pipeline data reported to the Federal Energy Regulatory Commission. More precise methods are being developed by Oak Ridge for BTS in consultation with the Corps and the modal administrations of the Department of Transportation.
- According to the 1993 Carload Rail Waybill Sample, collected by the Interstate Commerce Commission and processed by the Federal Railroad Administration, the CFS estimate of 1.01 trillion ton miles by rail is low by 113 billion ton miles. Roughly half the discrepancy is explained by 62.3 billion ton miles of imports from Canada in the Waybill and out of scope in the CFS. Other import and landbridge traffic could explain the remainder. The total discrepancy is less than one-third of one percent of all domestic ton miles.
- The modal shares of ton miles in the attached table and pie chart are significantly different from similar tables published by the Eno Transportation Foundation in *Transportation in America*. The differences are primarily definitional. Eno estimates intercity freight movements, while the CFS includes both local and intercity shipments. Eno does not split out parcel, postal, and courier services, resulting in a noticeably higher estimate of air freight activity than reported in the CFS. Eno excludes coastwise water movements, which account for about half the total waterborne ton miles reported in the attached table and pie chart. This substantial difference in reported waterborne ton miles significantly affects the other slices of the modal share pie chart, most notably dropping the percentage attributed to rail. The lower share of rail ton miles in the CFS is definitional, and not the result of a precipitous decline in rail traffic.

Preliminary observations:

- The attached table confirms the importance of parcel, postal, and courier services that have emerged in recent years, accounting for about 9 percent of the value of all shipments.
- When shipments reported as being sent by more than one mode are added to moves by parcel and courier services, intermodal transportation exceeds 200 million tons valued at \$660 billion. In particular, about 38 million tons worth \$83 billion moved by the "classic" intermodal combination of truck and rail. Assuming 50,000 pounds of payload per truck, that represents 1 1/2 million large trucks diverted from our highways for a major part of their trips.
- Preliminary findings show the importance of local transportation to the Nation's commerce. Nearly 30 percent of the value and over 56 percent of the tons of all shipments represented by the CFS are between places less than 50 miles apart. Over 38 percent of value and two-thirds of the weight--6.6 trillion tons--are sent less than 100 miles.

- The CFS captures the diversity and changing nature of commodity transportation in America. The importance of each mode and intermodal combination to the regions of the Nation will become apparent as the geographic detail is released in the Fall following extensive quality control and procedures to guarantee the confidentiality of individual returns.

To get further information, provide customer feedback, and get on the CFS product distribution list:

- check out the national transportation statistics area at www.bts.gov or gopher.bts.gov on Internet
- e-mail the DOT-Census Commodity Flow Survey team at cfs@bts.gov
- use your modem to reach the freight transportation data area on the BTS electronic bulletin board at 800-363-4BTS (202-493-2000 outside the U.S.)
- call the Commodity Flow Survey Branch, Bureau of the Census, at 301-457-2108

Commodity Flow Survey - Preliminary Findings

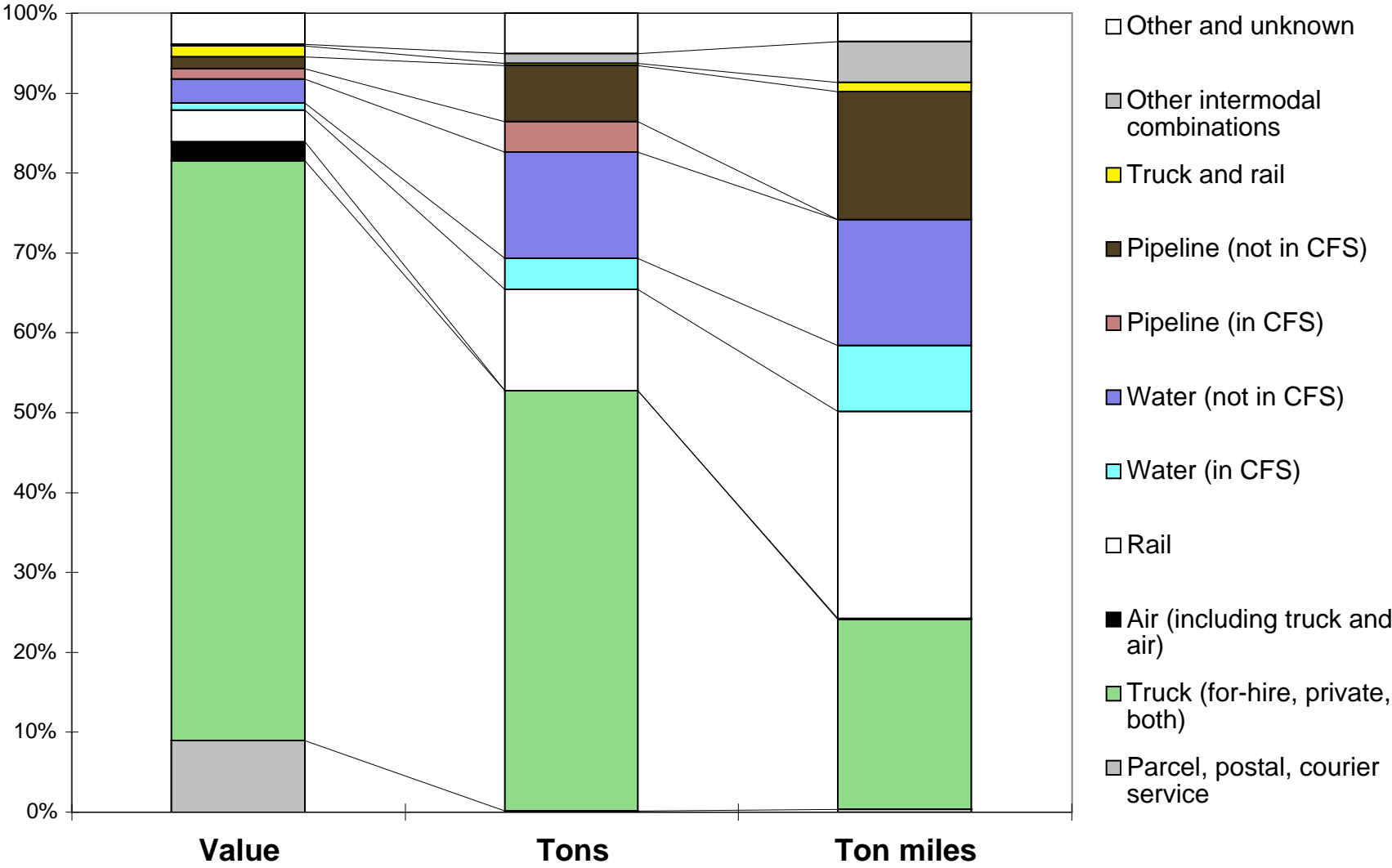
Mode	Value (\$million)	Tons (thousands)	Ton miles (millions)	Value (percent)	Tons (percent)	Ton miles (percent)	Value per pound	Ton miles per ton
Parcel, postal, courier service	563,603	18,682	12,901	8.9	0.2	0.3	\$15.08	691
Truck (for-hire, private, both)	4,588,201	6,511,884	876,870	72.6	52.6	23.7	\$0.35	135
Air (including truck and air)	149,256	2,788	3,435	2.4	0.0	0.1	\$26.77	1,232
Rail	250,534	1,570,087	958,658	4.0	12.7	26.0	\$0.08	611
Water (in CFS)	58,783	480,586	303,193	0.9	3.9	8.2	\$0.06	631
Water (not in CFS)	187,085	1,647,635	582,892	3.0	13.3	15.8	\$0.06	354
Pipeline (in CFS)	84,053	469,964		1.3	3.8		\$0.09	
Pipeline (not in CFS)	96,209	872,984	592,900	1.5	7.0	16.1	\$0.06	679
Truck and rail	82,895	38,014	43,127	1.3	0.3	1.2	\$1.09	1,135
Other intermodal combinations	13,839	148,675	187,270	0.2	1.2	5.1	\$0.05	1,260
Other and unknown	246,056	624,846	131,635	3.9	5.0	3.6	\$0.20	211
Sum	6,320,514	12,386,145	3,692,881	100.0	100.0	100.0	\$0.26	298
Intermodal	660,337	205,371	243,298	10.4	1.7	6.6	\$1.61	1,185

Ton miles (millions) for single-mode shipments and share of intermodal shipments

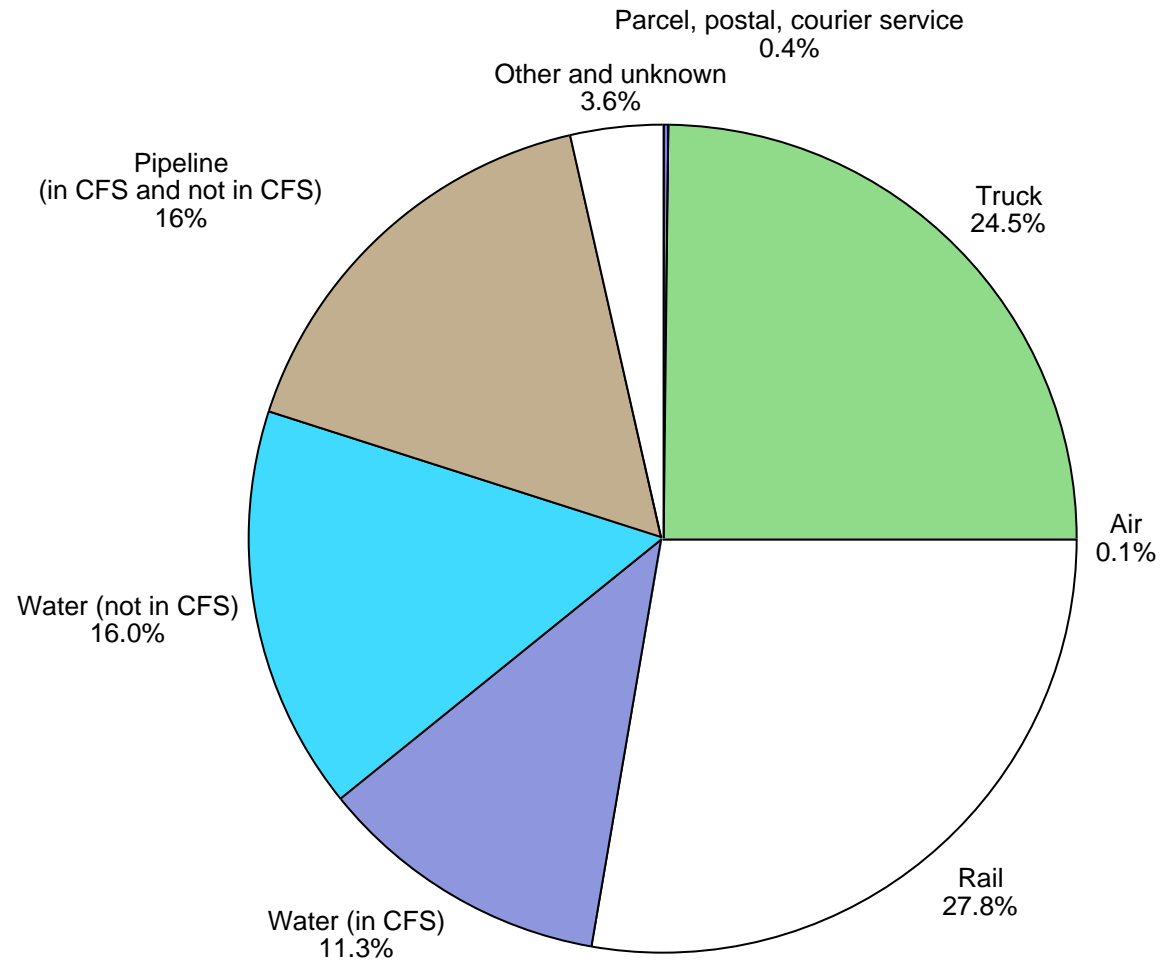
Parcel, postal, courier service	12,901	0.4
Truck	892,822	24.5
Air	3,283	0.1
Rail	1,011,193	27.8
Water (in CFS)	412,262	11.3
Water (not in CFS)	582,892	16.0
Pipeline (in CFS and not in CFS)	592,900	16.3
Other and unknown	129,774	3.6
Sum	3,638,027	100.0

DRAFT

Modal shares (DRAFT)



Ton miles by mode for single-mode and share of intermodal shipments (DRAFT)



Share of Value, Tons, Ton Miles by Shipment Distance (DRAFT)

